[0012] These aspects of the invention are not meant to be exclusive and other features, aspects, and advantages of the present invention will be readily apparent to those of ordinary skill in the art when read in conjunction with the appended claims and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] These and other features and advantages of the present invention will be better understood by reading the following detailed description, taken together with the drawings wherein:

[0014] FIG. **1**A is a view of a device according to one embodiment;

[0015] FIG. **1**B is an exploded view of the device shown in FIG. **1**A;

[0016] FIG. **1**D is a magnified view of section "B" in FIG. **1**C;

[0017] FIG. **1**E is view of a clip according to one embodiment;

[0018] FIGS. **1**F-**1**G are views of the locking mechanism in the locked and unlocked position; according to one embodiment;

[0019] FIG. **1**H is a bottom view of a top portion of a device according to one embodiment;

[0020] FIGS. **2**A-**2**C are various partial views of the device according to one embodiment;

[0021] FIG. **3**A is a partial cross-sectional view of a standard catheter;

[0022] FIG. **3**B is a partial cross-sectional view of a catheter according to one embodiment;

[0023] FIG. **4**A is a partial cross-section view of a standard catheter and introduction needle according to one embodiment;

[0024] FIG. **4**B is a partial cross-section view of a catheter and introduction needle according to one embodiment;

[0025] FIG. **5**A is a partial exploded view of the system in the unlocked position according to one embodiment;

[0026] FIG. **5**B is a magnified view of the indicated section in FIG. **5**A;

[0027] FIG. **5**C is a partial exploded view of the system in the locked position according to one embodiment;

[0028] FIGS. **6**A-**6**H are illustrated, sequential views of the device in practice, according to one embodiment;

[0029] FIG. **7** is a view of one embodiment of the device;

[0030] FIGS. **8**A-**8**B are views of one embodiment of the device;

[0031] FIGS. **8**C and **8**D are views of one embodiment of the device;

[0032] FIG. **9**A is a view of one embodiment of the device in the unlocked position;

[0033] FIG. **9**B is a view of the embodiment of the device shown in FIG. **9**A in the unlocked position;

[0034] FIG. **10**A is a view of one embodiment of the device in the unlocked position;

[0035] FIG. **10**B is a view of the embodiment of the device shown in FIG. **10**A in the unlocked position;

[0036] FIG. **11**A is a view of one embodiment of the device in the unlocked position;

[0037] FIG. **11**B is a view of the embodiment of the device shown in FIG. **11**A in the unlocked position;

[0038] FIG. **12** is an illustrative view of one embodiment of the rack-and-pinion embodiment of the device;

[0039] FIG. **13**A is an illustrative view of one embodiment of the packaging with the device;

[0040] FIG. **13**B is an illustrative view of one embodiment of the packaging with the device;

[0041] FIGS. **14**A-**14**C are illustrative views of a method of making a needle according to one embodiment;

[0042] FIGS. **14**D-**14**E are illustrative views of a technical problem according to one method of making needles;

[0043] FIGS. **15**A-**15**B are views of one embodiment of a catheter;

[0044] FIGS. **15**C-**15**E are views of one embodiment of the catheter shown in FIGS. **15**A-**15**B together with an introduction needle according to one embodiment;

[0045] FIGS. **16**A-**16**C are illustrative views of a method of making a needle according to one embodiment;

[0046] FIGS. **17**A and **17**B are illustrations of a magnetron and a circuit according to one embodiment of the method;

[0047] FIG. **18**A is an illustration of one method according to one embodiment;

[0048] FIG. **18**B is an illustration of one method according to one embodiment; and

[0049] FIGS. **19**A and **19**B are illustrative examples of one method of making a needle according to one embodiment.

DETAILED DESCRIPTION

[0050] The device and methods include an insertion device. The device may be used to insert an object, e.g., a medical device, into a patient, whether human or otherwise. In the exemplary embodiment, the device may be used to insert a catheter into a vein, for example, inserting an IV catheter. However, the device may be used for other applications, including, but not limited to, other vascular access application. The device may be beneficial for many reasons, including, but not limited to, increasing the success rate of insertion of the medical device and decreasing and/or limiting the trauma to the vessel during insertion.

[0051] In some embodiments of the device, the device includes an introduction needle and a catheter. The introduction needle may be located inside the catheter before the catheter is inserted into a patient. The introduction needle may be connected to the device, and the catheter may be inserted over the introduction needle. In some embodiments, the introduction needle and catheter are manufactured and packaged in an assembled fashion.

[0052] The device may be used to insert a catheter into a patient such that the introduction needle includes an opening that would enter the vein concurrent with or subsequent to the catheter entering the vein. The opening may be in fluid connection with a "flash chamber" in the device which allows for blood, or flash fluid, from the vein, or otherwise fluid from the area of the desired catheter destination, to flow through the hole in the introduction needle to the flash chamber. Thus, blood, or flash fluid, entering the flash chamber may indicate that the catheter has entered the vein/desired location. In various embodiments, the flash chamber may be located on the device such that a user may view the flash chamber easily while inserting the catheter.

[0053] Although discussion regarding the use of the insertion device for inserting a catheter into a vein is used throughout this description as an exemplary embodiment, the device is not limited to use as a catheter inserter into a vein and may be used to insert a catheter into other places on a patient's body. In some embodiments, the fluid visible in the flash chamber may be blood, and in other embodiments, the fluid visible in the flash chamber may be another